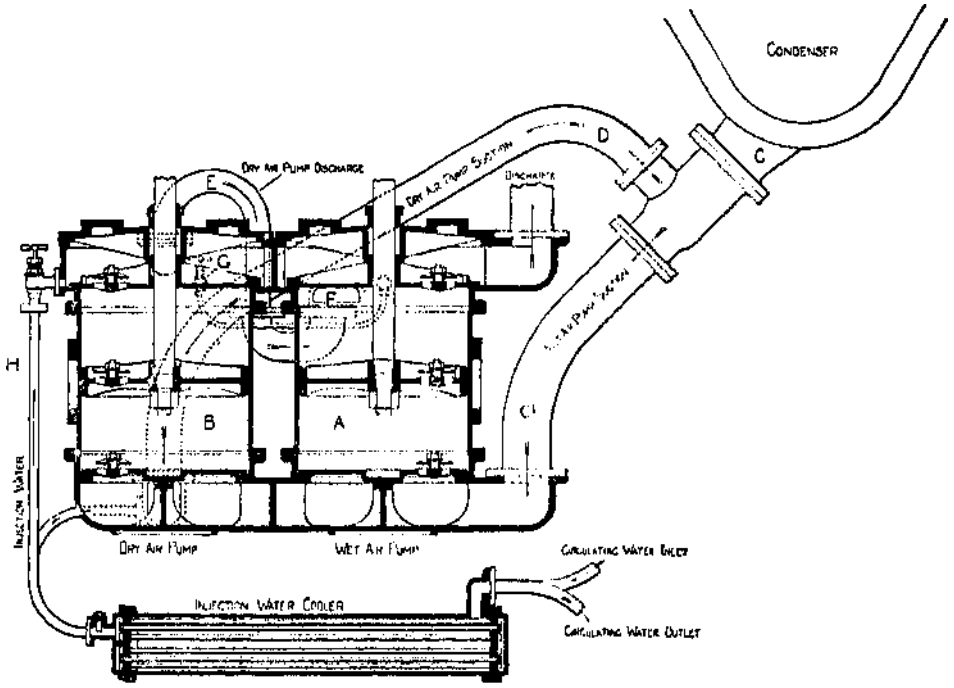
pump levers, arranged to give a bucket speed of 200 to 300 ft. per minute for an engine of moderate power, say about 1000 i.h.p. With small horizontal engines of this type the air-pump plunger is commonly operated by a tail rod from the low-pressure cylinder, the plunger then having the same piston speed as the engine. In that case the plunger is immersed in water, and arranged to act as a displacer of the water, the surface of the water then acting to draw in and compress the air.

When the condensing plant is independently operated, as is always the



I-%. 15.—Weir " Dual" Air-pump

case with steam turbines, the air-pump may be operated either by an electric motor or by a suitable steam engine. Messrs. G. & J. Weir, Ltd. make an air-pump operated through a steam cylinder, or which, by suitable driving arrangements, can be operated by a motor. A diagrammatic arrangement of their " dual " air-pump is shown in fig. 15. If the pump is steam-driven, the steam cylinder is arranged over the wet air-pump A with its piston on the same rod, and the dry air-pump B is operated from the rod of A by levers. If motor-driven, the motor is geared to a crank-shaft, the cranks operating the pumps in the usual way.

The air-pump works in the following manner:

The water of condensation all passes by the

pipe c^1 to the wet pump A, and a connection D leads to the dry air-pump B. Each pump works in the ordinary way except that the discharge from B passes along the pipe E through the spring-loaded valve F, and then into the wet pump A at a point below its